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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/660,370	09/12/2000	Thomas P. Hardjono	2204/A55	6652

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EXAMINER

TRAN, TONGOC

ART UNIT PAPER NUMBER

2134

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/660,370	HARDJONO, THOMAS P.	
	Examiner	Art Unit	
	Tongoc Tran	2134	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3, 5-12, 18-36 and 48-65 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 5-12, 18-36, 48-65 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to Applicant's amendment filed on 11/28/2005. Claims 1, 5, 20, 22, 26, 29, 32, 48, 53, 58, and 65 have been amended. Claims 2, 4, 13-17, 37-47 66-69 have previously canceled. Claims 1, 3, 5-12, 18-36, 48-65 are pending for examination.

Response to Arguments

2. Applicant's arguments filed on 11/28/2005 have been fully considered but they are not persuasive. Applicant contends that the cited prior art, Ballardie does not teach the limitation of "the rendezvous point device receives the encoded join request and authenticates the encoded join message using the authentication key associated with the host device...". Applicant contends that "Ballardie is fundamentally different than the claimed invention, as join request sent by the local designed router is digitally signed using the router authentication information, not the "authentication key associated with the host device..." (remark, page 14, first paragraph). Similar argument presented for similar limitation "forwarding of the joint message to a rendezvous point, to enable authentication of the join message at the rendezvous point using the authentication key associated with the host device..." (claims 20, 22, 29, 32) and "...authenticating the encoded join request using the host device authentication key..." (for independent claims 48, 53, 58 and 65). However, Ballardie teaches that the tree joining process is secure. On page 10, Ballardie disclose the tree joining process is secure by digitally signing the message will inherently requiring

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an authentication key in order to verify whether the message has been altered.

Furthermore, on page 2, second paragraph, Ballardie discloses "the secure joining implies the provision for authentication...the scheme we describe provides for the authentication of tree nodes (routers) and receivers (end-systems) as part of the tree joining process. Key distribution (optional) is an integral part of secure joining". Therefore, Ballardie does teach authentication key being distributed in order to ensure the transmission of the joined message is secure. In light of this interpretation, the limitation is met.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1, 3-12, 18-36 and 48-65 are rejected under 35 U.S.C. 102(b) as being anticipated by Ballardie (Network Working Group, University College of London, May 1996).

In respect to claim 1, Ballardie discloses a communication system comprising:

a rendezvous point device that forwards multicast communication messages to members of a shared tree; a designated device in communication with the rendezvous point device via a number of intermediate devices (see

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pages 8-12, e.g. host h, router A and B-intermediate device and Core router- rendezvous point device, page 11);

a host device in communication with a designated device, wherein: the host device forwards an authentication key, generated by a key server for the host device, to the designate device (page 10, last paragraph – page 11, first paragraph, page 2, third paragraph, the key server is inherently required in order for the key to be generated).

the host device sends a join request to the designated device using a predetermined multicast group management protocol in order to join the shared tree for receiving the multicast communication messages forwarded by the rendezvous point device (pages 9-11);

the designated device receives the join request and forwards to the rendezvous point device via the number of intermediate devices an encoded join request generated using an authentication key associated with the host device (pages 9-10);

the rendezvous point device receives the encoded joint request and authenticates the encoded join message using the authentication key associated with the host device; and the host device is prevented from receiving the multicast communication messages forwards by the rendezvous point device, if the rendezvous point device determined that the encode join message is not authentic (pages 10, last paragraph-page 12, 3rd paragraph); and

In respect to claim 3, Ballardie discloses the communication system of claim 1, wherein the key server provides the authentication key to both the host

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device and the rendezvous point device using a secure key distribution mechanism (pages 8-11).

In respect to claim 4, Ballardie discloses the communication system of claim 1, wherein the host device sends the authentication key to the designated device (see page 9-10).

In respect to claim 7, Ballardie discloses the communication system of claim 1, wherein the designated device joins the shared tree on behalf of the host device (see pages 10-11).

In respect to claim 8, Ballardie discloses the communication system of claim 7, wherein the designated device establishes appropriate multicast routes for forwarding multicast communication messages to the host (see Ballardie, pages 9-12).

In respect to claim 9, Ballardie discloses the communication system of claim 1, wherein each intermediate device receives the encoded join request and forwards the encoded join request toward other routing element (see page 10).

In respect to claim 10, Ballardie discloses the communication system of claim 9, wherein each intermediate device that is not already joined to the shared tree joins the shared tree on behalf of the host device and establishes appropriate multicast routes for forwarding multicast communication messages toward the host device upon receiving the join request (see Ballardie, pages 8-12).

In respect to claim 11, Ballardie discloses the communication system of claim 9, wherein each intermediate device that is already joined to the shared

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tree waits for an explicit acknowledgment message from the primary router and establishes appropriate multicast routes for forwarding multicast communication messages toward the host device only upon receiving the explicit acknowledgment message from the primary router (see Ballardie, pages 8-12).

In respect to claim 12, Ballardie disclose the communication system of claim 1, wherein the primary router sends an explicit acknowledgment message toward the host device upon determining that the join request is authentic (see Ballardie, page 9-12).

In respect to claim 18, Ballardie discloses a method comprising:

Obtaining an authentication key associated with a host device from a key server following authentication of the host device by the key server; and sending a join request to a designated device using a predetermined multicast group management protocol, the join request including the authentication key for use by the designated device for encoding the join message prior to forwarding of the join message to rendezvous point (see Ballardie, pages 8-12, page 10, last paragraph – page 11, first paragraph, col. 2, third paragraph, the key server is inherently required in order for the key to be generated).

In respect to claim 19, the claim limitation is similar to claim 6. Therefore, claim 19 is rejected based on the similar rationale.

In respect to claims 20-23, the claim limitations are similar to claims 18-19. Therefore, claims 20-23 are rejected based on the similar rationale.

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In respect to claims 24-25, Ballardie discloses the computer readable medium of claim 22, wherein the computer readable medium is a computer storage medium and a computer communication medium (see Ballardie, page 1).

In respect to claim 26, Ballardie discloses a method comprising:

Receiving a join request from a host device; generating an encoded join request using an authentication key associated with the host device; and sending the encoded join request toward a rendezvous point device to enable authentication of the join message at the rendezvous point using the authentication key associated with the host device (see Ballardie, pages 8-12; page 2, third paragraph).

In respect to claim 27, Ballardie discloses the method of claim 26, wherein the join request includes the authentication key (see Ballardie, page 10).

In respect to claim 28, Ballardie discloses the method of claim 26, further comprising:

Joining a shared tree on behalf of the host device and establishing and establishing appropriate multicast routes for forwarding multicast communication messages to the host devices (see Ballardie, pages 8-12).

In respect to claims 29-36, the claim limitations are similar to claims 24-28. Therefore, claims 29-36 are rejected based on the similar rationale.

In respect to claim 65, the claim limitation is substantially similar to claim 1. Therefore, claim 65 is rejected based on the similar rationale.

In respect to claim 48, Ballardie discloses a method comprising:

Receiving, from a designated routing device coupled to a host an encoded join request for the host device, the encoded join request being encoded by the designated routing device using an authentication key associated with the host, the authentication key being received by the host device following authentication of the host device by a key server and forwarded in a join request forwarded from host device to the designated routing device; the authentication key being received by the host device following authentication of the host device by a key server and forwarding in a join request forwarded from host device to the designated routing device (see Ballardie, pages 8-12, note page 10, last paragraph – page 11, first paragraph, page 2, third paragraph, the key server is inherently required in order for the key to be generated and distributed); authenticating the encoded join request using the host device authentication key to determine whether or not the encoded joint message is authentic; and establishing appropriate multicast routes for forwarding multicast communication messages to the host device if and only if the join request is determined to be authentic (see Ballardie, pages 8-12, page, e.g. “c also authenticates host h”, page 10, last paragraph to page 12, third paragraph; page 2, third paragraph).

In respect to claim 49, Ballardie discloses the method of claim 48, wherein authenticating the encoded join request comprises:

maintaining a number of authentication keys; determining the host device for the encoded join request; and searching for an authentication key associated with the host device (see Ballardie, page 10, last paragraph to page 12, third paragraph).

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In respect to claim 50, Ballardie discloses the method of claim 49, wherein authenticating the encoded join request further comprises:

 failing to find an authentication key associated with the host device; and
 determining that the encoded join request is not authentic (see Ballardie, page 10, last paragraph to page 12, third paragraph).

In respect to claim 51, Ballardie discloses the method of claim 49, wherein authenticating the encoded join request further comprises:

 finding an authentication key associated with the host device; and
 authenticating the encoded join request using the authentication key associated with the host device (see Ballardie, page 10, last paragraph to page 12, third paragraph).

In respect to claim 52, Ballardie discloses the method of claim 48, further comprising:

 sending an explicit acknowledgment toward the host device if and only if the encoded join request is determined to be authentic (see Ballardie, page 10, last paragraph to page 12, third paragraph).

In respect to claims 53-62 and 65, the claim limitations are apparatus and computer readable medium and a communication system claims that are substantially similar to method claims 48-52. Therefore, claims 53-62 and 65 are rejected based on the similar rationale.

In respect to claims 63-64, Ballardie discloses the computer readable medium of claim 58, wherein the computer readable medium is a computer storage medium and a communication medium (see Ballardie, page 1).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tongoc Tran whose telephone number is (571) 272-3843. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Morse can be reached on (571) 272-3838. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Examiner: Tongoc Tran
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February 7, 2006



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